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CENTER FOR HEALTH POLICY

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COMMUNITY CONDITIONS FAVORABLE FOR SUBSTANCE USE

Summary

- Alcohol is the most widely used substance in Indiana. About half of all Hoosiers ages 12 and older consumed alcohol in the past month and almost one-fourth engaged in binge drinking.
- Tobacco consumption was also high, with nearly one-third of Indiana residents reporting tobacco use in the past month.
- Among illicit drugs, marijuana was the drug most commonly used.
- Significant community-level risk factors for substance use include but are not limited to:
 - Poverty
 - Violence
 - Low neighborhood attachment and community disorganization
 - Community norms and laws favorable toward drug use, firearms, and crime
 - Availability of alcohol / other drugs
- Both Indiana's poverty levels and violent crime rates are higher than the national average.
- We recommend the following policies and strategies aimed at mitigating community-level risk factors while enhancing protective factors for substance misuse:
 - Mental and behavioral healthcare system investments
 - More investment in public health funding
 - Bolstering community-based interventions, e.g. community-based recovery groups

Introduction

Substance use disorders pose significant public health problems in the United States. The most recent data released by the Substance Abuse and Mental Health Services Administration (SAMSHA) estimated that in 2016, 10.6 percent of people ages 12 years or older used illicit drugs in the past month, and 7.5 percent had a substance use disorder in the past year [1]. In 2016, approximately 20.1 million people ages 12 or older had a substance use disorder (SUD) in the past year, related to their use of alcohol, illicit drugs, or both. Among the 7.4 million people who

had an illicit drug use disorder, the most common disorders were for marijuana (4.0 million people) and opioids (2.1 million people) [1].

Substance misuse has been associated with an increased morbidity and mortality from cardiovascular conditions; injuries and motor vehicle crashes; sexually transmitted and blood-borne illnesses, including HIV/AIDS and hepatitis B and C, resulting from risky sexual behaviors and/or injection drug use; pregnancy complications and neonatal abstinence syndrome (NAS); and drug overdoses [2, 3]. Furthermore, substance use can lead to harmful





social and legal consequences, such as family disruptions, financial problems, lost productivity, failure in school or at work, domestic violence, child abuse, and crime [2]. The National Institute of Drug Abuse (NIDA) estimates that abuse of tobacco, alcohol, and illicit drugs is debilitating to our nation, exacting more than \$740 billion annually in costs related to crime, lost work productivity, and healthcare [4].

The probability of whether an individual engages in substance use is associated with several *risk factors* (i.e., factors typically correlated with an increased likelihood of substance use such as perception of low risk of harm from using a substance, easy availability of substances) and protective factors (i.e., factors typically associated with a decreased likelihood of substance use such as exposure to prevention messages) [5].

Risk and protective factors include variables that reflect different domains of influence, including the individual, family, peer, school, community, and society as encapsulated by the

Socio-ecological Model [6, 7, 8]. Interventions to prevent substance use are commonly designed to reduce the influence of risk factors and enhance the effectiveness of protective factors.

The purpose of this brief is to review and analyze the community-level risk factors that are favorable for substance use in Indiana. Our goal is to inform policymakers, prevention and treatment professionals, community

stakeholders, and the general public about the community conditions that are conducive to substance use. Furthermore, we recommend policies and strategies aimed at mitigating community-level risk factors while enhancing protective factors for substance misuse.

Substance Use Trends in Indiana

In this section, trends are presented concerning the use of specific substances for Indiana and the United States. We examined substance use within the general population; i.e., prevalence rate estimates based on findings from the National Survey on Drug Use and Health (NSDUH) [9]. Alcohol was the most widely used substance in Indiana. About half of all Hoosiers ages 12 and older drank alcohol in the past month and almost one-fourth engaged in binge drinking [9].

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consumption was also high. Nearly one-third of Indiana residents reported using tobacco in the past month. Among illicit drugs, marijuana was the drug most commonly used [9].

The United Health Foundation's Annual Health Rankings indicates that 18.6 percent of Hoosier adults engage in excessive drinking (ranked 18th overall), and 21.1 percent of adults regularly smoke tobacco (ranked 41st overall) [10].

Our nation's healthcare systems are contending with a substance use epidemic, the opioid crisis, which transcends socioeconomic, geographic,



and racial divides. Unfortunately, opioid use related outcomes in Indiana are worse than the national average. Since 1999, the nation has experienced a trend of increasing drug overdose deaths. Recent rate increases have been driven by synthetic opioids, including illicitly manufactured fentanyl and heroin. Indiana experienced 17.9 per 100,000 population drug-related deaths in 2017 (ranked 34th overall) [10]. Opioid pain relievers, such as oxycodone or hydrocodone, contributed to 274 (22.2%) of the 1,236 drug overdose deaths in Indiana in 2015. The number of heroin overdoses increased 40.6% from 2014 to 2015 [11]. This increase may be due to increased heroin supply (cheaper and easier accessibility), widespread prescription opioid exposure, and increasing rates of opioid addiction.

Community-level conditions in the context of the Socio-ecological Model

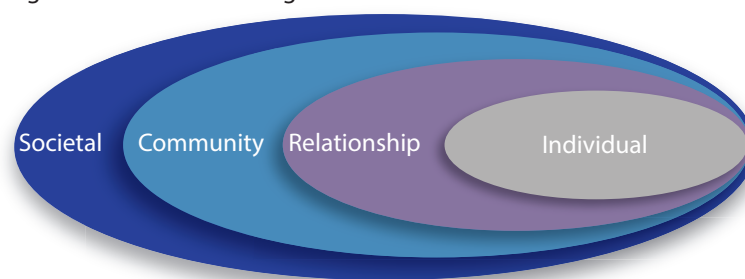
Most substance use occurs in early adulthood; therefore, addressing risk and protective factors present in early life and adolescence can curb future rates of substance abuse [12]. Risk factors for substance use include drug availability, neighborhood characteristics, weak family relationships, family substance use, peer use, and mental health problems [12-16]. The strongest predictive risk factor for substance use among youth was peer substance use [15, 16]. Conversely, protective factors are those that mediate or moderate substance use. Strong family relationships, neighborhood

economic viability, low childhood stress, restrictive laws, and excise taxes can all lower the likelihood of substance use even in the face of risk factors [12, 15, 16]. Addressing these risk and protective factors would require tackling many larger population concerns, but would likely result in benefits to society beyond those associated with decreased substance use. Due to the longitudinal nature of risk and protective factors, the effect of interventions to reduce risk factors and enhance protective factors may not be immediate; ongoing intervention and monitoring will be necessary to achieve maximum effectiveness [16].

Prevention requires understanding the factors that influence substance abuse. The four-level social-ecological model (see Figure 1) can help better understand substance use and the effect of substance abuse prevention strategies. This model considers the complex interaction between individual, relationship, community, and societal factors. It allows us to understand the range of factors that put people at risk for substance use. Besides helping to clarify these factors, the model also suggests that in order to prevent substance use, it is necessary to act across multiple levels of the model at the same time.

This approach is more likely to sustain prevention efforts over time than any single intervention [17]. Although all levels of the Socio-ecological Model are important to consider, as the title suggests, this brief focuses on community-level risk factors for substance use.

Figure 1. The Social-Ecological Model: A Framework for Prevention



Source: CDC, 2018[17]

Community-level analysis explores the settings, such as schools, workplaces, and neighborhoods, in which social relationships occur. This type of analysis seeks to identify the characteristics of these settings that are associated with substance use. Prevention strategies at this level are typically designed to impact the social and physical/built environment – for example, by reducing social isolation, improving economic opportunities in neighborhoods, as well as other processes, and implementing policies within school and workplace settings [18]. In communities, prominent risk factors include but are not limited to:

1. *Availability of alcohol and other drugs*

The more available alcohol or drugs are in a community, the higher the risk that young people will abuse these substances. Even perceived availability is associated with risk; i.e., in schools where children think that drugs are more available, a higher rate of drug use occurs [6, 8, 12].

2. *Availability of firearms*

The prevalence of firearms in a community predicts a greater likelihood of violent behavior. Numerous studies have established a positive relationship between the availability of firearms and the prevalence of substance use, though causality has been difficult to establish from the existing research and literature. Furthermore, legislation, enforcement, and community dynamics



combine to influence the local accessibility of drugs and weapons [6, 8, 12].

3. *Community norms and laws favorable toward drug use, firearms, and crime*

Community norms (attitudes) and policies surrounding alcohol/drug use and crime are communicated in many ways. Formally, they are communicated through laws and written policies and enforcement (examples: alcohol taxes, liquor licenses, drunk driving laws, infractions for selling to minors, laws regulating the sale of firearms). Informally, norms, expectations, and social practices by parents and the community may communicate a climate of acceptance, approval, or tolerance of problem behaviors [7, 8, 13].

4. *Transitions and mobility*

Even normal school transitions predict increases in problem behaviors. When children move from elementary school to middle school or from middle school to high school, significant increases in the rate of drug use, school misbehavior, and delinquency result. When communities are characterized by frequent nonscheduled transitions, problem behaviors increase. Communities with high rates of mobility (families moving frequently from home to home) appear to be linked to an increased risk of drug and crime problems. The more often people in community move, the greater the risk of both criminal behavior and drug-related problems in families [12, 13, 16].

5. *Low neighborhood attachment and community disorganization*

Higher rates of drug problems, juvenile delinquency, and violence occur in communities or neighborhoods where people have little attachment to the community, where the rates of vandalism are high, and where there is low surveillance of public places. These conditions are not limited to low-income neighborhoods; they can also be found in wealthier neighborhoods. Lower rates of voter participation and parental involvement in schools also indicate lower community attachment [6, 7, 12, 13].

6. *Poverty or extreme economic deprivation*

Children who live in deteriorating and crime-ridden neighborhoods characterized by extreme poverty are more likely to develop problems with delinquency, teen pregnancy, school dropout, and violence. Children who live in these areas — and have behavior and

adjustment problems early on — are also more likely to have problems with drugs later in life [5, 6, 7].

In addition to the key factors listed above, there are additional circumstances that can contribute to a community's level of substance use. For additional factors that increase or decrease risk, see Table 1.

Community-level conditions that are favorable to substance use in Indiana

It's important to be aware of the variation in the prevalence and influence of community risk factors. The challenges and epidemiological complexities are markedly different in more affluent counties compared to those that are socioeconomically vulnerable. As such, state-level factors provide insight into how Indiana compares relative to the other states, but disparities within Indiana must also be taken

Table 1. Additional community factors that affect substance use risk

Community Factors that Increase Risk of Substance Use	Community Factors that Decrease Risk of Substance Use
Low quality schools	Safe, supportive, connected neighborhood
Limited prevention and recovery resources	Range of opportunities in the community for meaningful youth engagement
Weak community infrastructure/lack of services for those in need	Local, state policies and practices that support healthy norms and child-youth programs
Lack of social cohesion	Positive connection to other adults

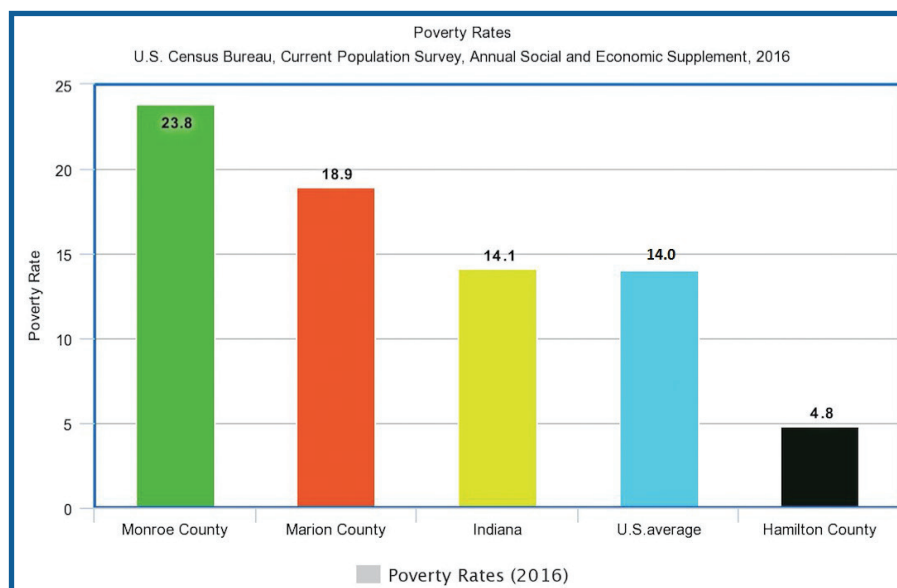
Source: [5, 6, 7, 8, 12-16]

into account when formulating, implementing, and evaluating policies and interventions. In this section, we provide statistics that provide insight into some of the myriad community-level conditions that influence substance use.

One of the most telling community-level conditions of substance use is the presence of economic prosperity or lack thereof. Statewide, 14.1 percent of Hoosiers live below the poverty line, placing Indiana 30th in the nation. The pervasiveness of poverty varies by county, with Hamilton County reporting the lowest poverty rate at 4.8 percent and Monroe County experiencing the highest poverty rate at 23.8 percent. Marion County, Indiana's most populous county, reported a poverty rate of 18.9 percent [19]. Figure 2 displays the spectrum of poverty levels present in Indiana.

The median per capita income for Indiana in 2016 was \$27,464, which is \$3,664 lower than the U.S. median per capita income of \$31,128 [19]. On a slightly more positive note, the 2016 unemployment rate across Indiana was 4.4 percent in 2016, ranking it 20th among all states and Washington D.C. [19]. Indiana, as a whole, stands to do better to create community conditions that are more protective against substance use and favorable to nurturing children to become productive and happy adults. Nearly one-in-five (19.1%) Indiana children are living in poverty and just over one-fourth (26.4%) have access to parks or playgrounds, recreation or community centers, libraries or book mobiles, and sidewalks or walking paths [10, 20]. Children living apart from parents can place an additional strain on community resources. In 2017, Indiana ranked 45th in this metric with 11 children in

Figure 2. Poverty rates (percentage) in Indiana, 2016



foster care for every 1,000 children under age 18 [20]. Furthermore, 13.0 percent of youths ages 16 to 24 are neither working nor in school [10].

As previously mentioned, violent crime is a very strong community-level risk factor for substance use. Violent crimes are typically defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, rape, robbery, and aggravated assault. The most up-to-date data indicate that Indiana experienced 404.7 violent crimes per 100,000 inhabitants in 2016; a rate higher than the national average of 386.3 violent crimes per 100,000 inhabitants. Marion County reported the highest violent crime rate with 1,197 violent crimes per 100,000 inhabitants. Randolph County tallied the lowest violent crime rate with only 28 per

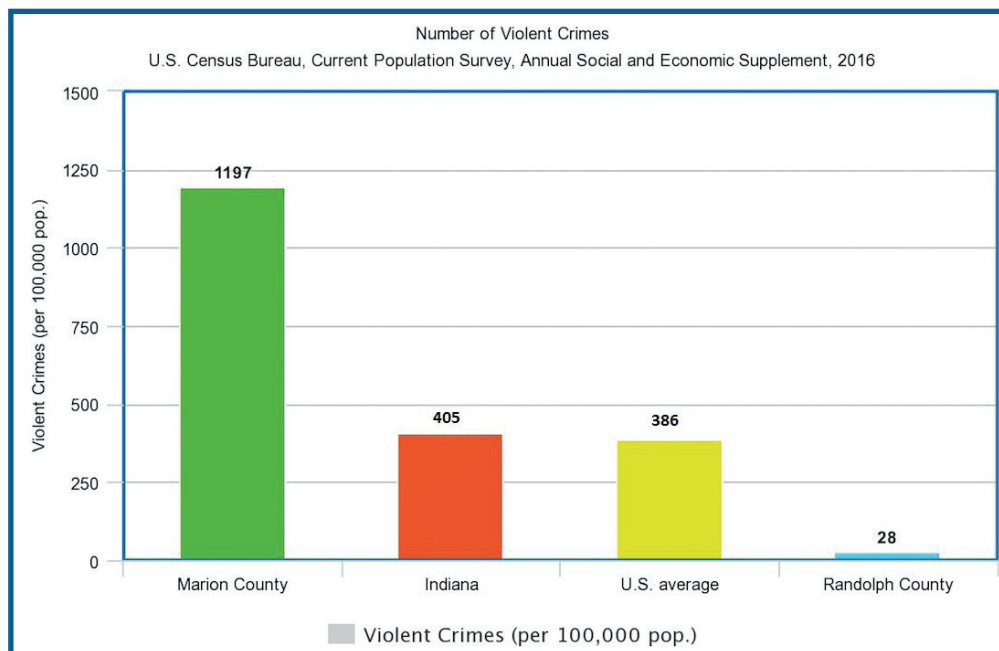
100,000 inhabitants [30]. These statistics are graphically compared in Figure 3.

High levels of incarceration rates are also considered as a prominent community risk factor. According to the most recently publicly available data, 458 people are incarcerated per 100,000 population in the United States. Indiana's statewide incarceration rate is 412 incarcerated per 100,000 population, a rate slightly less than the national average. In 2015 alone, Indiana spent 776 million dollars in correction-related expenditures [30].

Thoughts for Policymakers

Indiana and its residents suffer from a heavy economic burden caused by substance abuse. The most recent estimates place the costs of

Figure 3. Violent crime prevalence rates per 100,000 population



alcohol use in Indiana in excess of \$4.4 billion [21]. Additionally, a recent report estimated that tobacco use in Indiana resulted in approximately \$6.8 billion dollars spent in 2014, in the form of healthcare costs, tax burdens, and lost productivity [22]. In the same year, the costs attributable to drug overdose deaths were estimated at over \$1.4 billion [23]. Also, according to a state-by-state analysis published in 2015, opioid abuse is costing the state over \$650 million in healthcare costs [24]. Aggregating these figures amounts to roughly \$13 billion in total estimated annual economic burden placed on the state of Indiana from substance abuse.

Indiana stands much to gain if it effectively fortifies its communities in order to improve substance use trends. Policymakers are behooved to examine what strategies, policies, and interventions other nations, states, and



municipalities have used to curb the negative effects of substance use. Prevalent factors don't exist in silos, so effective policy must be formulated, implemented, and evaluated with a multifaceted approach. We propose a multitude of policies intended to reduce substance use among youth and, over time, reduce substance abuse among adults by (a) addressing the factors in a community that increase the risk of

substance abuse and (b) promoting the factors that minimize the risk of substance abuse. Our recommendations emphasize the public health prevention spectrum (primary to tertiary) approach to mitigating community risk factors. Primary prevention entails precluding individuals from acquiring a disease at all. Secondary prevention aims to detect a disease early and prevent it from getting worse. Tertiary prevention attempts to improve quality of life and reduce the symptoms of a disease already contracted. Our recommendations include:

More investment in public health funding

Indiana ranks 49th in public health funding with \$49 per capita annually vs. \$86 for the national average vs. \$506 for the highest ranked state [10]. Public health funding plays a critical role in improving efforts to curb the deleterious effects of substance use.

Infrastructure and capacity building for substance use recovery would benefit from increased investment to support policies and interventions aimed at any sphere of the social ecology model. A recently published systematic review suggests that local public health interventions are cost-saving, offering substantial returns on investment (ROI) with a median ROI for all 29 local public health interventions of \$4 for every dollar spent [25].

Mental and behavioral healthcare system investments

America has some of the worst mental and behavioral healthcare systems of any relatively



affluent developed nation. Investment in funding streams, service delivery capacities, and an adequate workforce of substance abuse treatment and recovery systems is paramount to curbing substance use and abuse. The cost-benefit ratios for early treatment and prevention programs for addictions and mental illness programs range from 1:2 to 1:10 [26]. This means a \$1 investment yields \$2 to \$10 savings in health costs, criminal and juvenile justice costs, educational costs, and lost productivity. The potential return on investment for early addictions/mental illness treatment and prevention programs should be enticing to all policymakers.

Bolstering community-based interventions, e.g. community-based recovery groups

Community-based interventions are best suited to mitigate community-level risk factors. Long-term analyses suggest a consistent track record for substance use outcomes in communities with a Drug-Free Communities grantee from 2002 to 2012. The prevalence of past 30-day use of alcohol, tobacco, and marijuana declined significantly among both middle school and high school students. The prevalence of past 30-day alcohol use dropped the most in absolute percentage point terms, declining by 2.8 percentage points among middle school students and declining by 3.8 percentage points among high school students. The prevalence of past 30-day tobacco use declined by 1.9 percentage points among middle school students, and by 3.2 percentage points among high school students from DFC grantees' first report to their most recent report. Though significant, the declines in the prevalence of past 30-day marijuana use were less pronounced, declining by 1.3 percentage

points among middle school students and by 0.7 percentage points among high school students [27]. Another study estimated the return on investment from therapeutic services for alcoholism to be \$1.98 [28]. A 2012 study of 805 Medicaid insured tobacco users estimated that a community-based tobacco cessation intervention produced a \$2 to \$2.25 ROI [29].

Conclusion

As described above, a confluence of community-level factors impact the prevalence and societal effects of substance abuse. Significant community-level conditions include but are not limited to: poverty, violence, availability of alcohol/other drugs, low neighborhood attachment and community disorganization, and the favorability of community norms and laws toward drug use, firearms, and crime. Strategic investments to strengthen Indiana's communities against risk factors and to bolster the protective factors of substance abuse will foster dividends in both the immediate and long-term future. Preventive policies and concerted investments in substance abuse treatment capacities and infrastructure can curb the exorbitant economic and societal cost attributed to substance abuse, while preparing our healthcare systems for the next substance abuse epidemic to affect the Hoosier state and its residents.





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